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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,577	02/12/2002	Ji-Young Jang	A-0010US	9888

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EXAMINER

MANOHARAN, VIRGINIA

ART UNIT PAPER NUMBER

1764

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/075,577

Applicant(s)

JANG ET AL.

Examiner

Virginia Manoharan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-17, 19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). See e.g., the claimed "...is greater than 0.7 kg/cm<sup>2</sup> but less than or equal to 2.0 kg/cm<sup>2</sup> in claim 19 which is not positively recited in the specification. The same holds true for the claimed "...at pressure level approximately within 0.7-2.0 kilograms /cm<sup>2</sup>" in claim 14. Compare with the recitation in the specification at page 7, lines 1-12 of "according to the present invention... generates a 0.6 kg/cm abs. or higher pressure of steam.."; and at page 6, lines 9-11 of "generating a low pressure steam at 0.6-2.0 kg/cm<sup>2</sup> abs."; and further at page 75, lines 6-7 of "low pressure steam of about 0.6-2.0 kg/cm<sup>2</sup> abs.

Claims 14-17, 19 & 21-24 are objected to because of the following informalities:

- a) There appear to be no tie-in between the steps of "entraining the vapor" and "condensing the vapor stream" recited in claim 14. Also, the step of "condensing the vapor stream to separate acetic acid from water..." is not understood as the "condensing" step would normally function to liquefy the vapor stream and not for separation purposes as claimed.
- b) In claim 14, line 1, "recovering" should be --separating-- to be consistent with the term used in line 11 of claim 1.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-17, 19 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0764627 to Ohkoshi et al in view of Applicants' Disclosure of Admitted Prior Art.

The EP '627 discloses substantially the process as claimed. See e.g., page 3, lines 21-22; page 4, lines 40-53; and the claims at page 8. The 10kg/cm<sup>2</sup>G at page 7, line 27 disclosed in EP '627 is deemed to read on the broadly claimed "dehydration column operating at greater than ambient pressure..." which is obviously greater than 1.2 kg/cm<sup>2</sup>abs as further claimed in claim 22.

The process of EP '627 differs from the claimed invention in that claim 14 recites "thereby allowing a generation of low pressure steam at a pressure level approximately within 0.7-2.0 kilograms/cm<sup>2</sup> during a condensing process"; and "to separate acetic acid from water and to generate low pressure steam at a pressure level approximately within 0.7-2.0 kilograms/cm<sup>2</sup>". However, applicants admit at page 11, second through the fourth paragraphs that "... Fig.2 illustrates a typical flow diagram using a conventional distillation method for acetic acid dehydration in the dehydration section of the terephthalic acid production plant. The conventional distillation system incorporates a steam generator to recover some steam for reuse..... Dehydration column 200 typically includes trays 290 and a reboiler 202. Water streams 281 containing acetic acid solvent 282 and a small amount of organic by-product 283, methyl acetate, are fed to the dehydration column 200 which typically consists of 70-90 distillation trays 290. Acetic

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acid 292, typically at 92-95 wt% concentrations, is recovered from the bottom of the dehydration column 200 and returned to the reaction section....

.....Overhead condenser 220 produces low-pressure steam 291 during condensation to recover some energy to be recycled into the plant for various uses. Typically, a conventional dehydration column generates low-pressure steam (typically 0.6 0.7 kg/cm<sup>2</sup>g) at the top of the column."

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the limitation admitted by applicants to the process of EP '627 in as much as both references are directed to similar processing environment, i.e., to producing highly pure terephthalic acid.

The method of using or directing the low pressure steam for power generation or to a power generation as recited in claim 23 and 24 respectively are obvious in view of applicants' admission of incorporating into a conventional distillation system a steam generation as taught above.

Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- (a) WO '068 discloses an azeotropic distillation process.
- (b) WO '065 discloses the dehydration of acetic acid by azeotropic distillation in the production of an aromatic acid.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia Manoharan whose telephone number is (571) 272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tgd/Manoharan

November 19, 2004

  
VIRGINIA MANOHARAN  
PRIMARY EXAMINER  
ART UNIT 1764  
11/23/04